

October 2017

On 3 Oct 2017, Prof. Bob Ross Barmish gave a seminar on “A New Metric for Mission-Critical Risk Assessment with Application to Earthquake and Tsunami Data”

This seminar describes his collaborative research involving a new metric which is useful in situations for which downside risk is of paramount concern. Throughout the talk, the participants compare this quantity with the classical Expected Value $E(X)$.

In fact, decisions based on the expected value of the moment magnitude have been blamed for tragic failures in the case of Tohoku earthquake and tsunami in 2011. More generally, when mission-criticality dictates that a conservative prediction of the random variable X be provided to a technically unsophisticated public, the reported risk level should be both simple to understand and easy to interpret. Furthermore, such a report should not require clarification by bringing additional variables such as variance into play. At the same time, the reported expectation of X should not be unduly conservative so as not to be useful or credible in the future. With these considerations in mind, Prof. Bob explain how $CEV(X)$ systematically discounts $E(X)$ without being excessively heavy-handed.

